

1. GENERAL

PROJECT DESCRIPTION

This project involves the reconstruction of an existing Traffic Control Signal at the intersection of MD 32 and Raincliffe Road / Sandosky Road in Carroll County. The existing strain pole Traffic Signal shall be replaced with a new mast arm Traffic Signal. Additionally, video detection shall be used for all approaches. Countdown pedestrian signals with audible pushbuttons shall be installed across the north leg of this intersection. MD 32 is assumed to run a north-south direction.

II. INTERSECTION OPERATION

- The intersection shall operate in a NEMA six-phase, fully-actuated mode, with the MD 32 approaches running concurrently. The Exclusive left turn phases shall remain in operation for both approaches of MD 32. A Countdown pedestrian phase with audible pushbutton actuation shall be provided across the north leg of MD 32. The Raincliffe Road / Sandosky Road approaches shall also run concurrently.
- A full-traffic-actuated, eight-phase controller with video interface and all necessary equipment housed in a NEMA size "6" base-mounted cabinet shall be installed at this intersection.
- SHA signal shop shall install APS control unit into controller cabinet. The Contractor shall deliver Unit and audible pushbuttons to the SHA Signal Shop for testing and programming.

III. SPECIAL NOTES

- The Contractor shall be responsible for terminating all signal cables, excluding interconnect, to the appropriate terminals and shall properly label each cable.
- All controller cabinet wiring will be performed by the S.H.A. Signal Shop Contact Mr. Ed Rodenhizer at (410) 787-7652 seventy-two hours in advance of intended work.
- All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved.
- Upon completion of this project, the Contractor shall notify Mr. Robert Snyder at (410) 787-7631 for the phone line installation. The Contractor is to provide Mr. Robert Snyder with the nearest street address, zip code and phone number.

IV. APS will function as follows:

FOR MD 32 (SYKESVILLE ROAD) NORTHSIDE

- When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be "Wait to cross Sykesville at Raincliffe."
- When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

FOR MD 32 (SYKESVILLE ROAD) SOUTHSIDE

- When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will be "Wait to cross Sykesville at Sandosky."
- When WALK phase begins, the message will be a rapid tick which will last for the duration of the WALK phase.

The contact persons for District #7 are as follows:

Mr. John Concannon Assistant District Engineer - Traffic Phone: (310) 624-8141	Mr. Richard L. Daff, Sr. Chief, Traffic Operations Division Phone: (410) 787-7630
Mr. Ray Johnson Assistant District Engineer - Maintenance Phone: (310) 624-8105	Mr. Ed Rodenhizer Signal Shop 410-787-7652
Ms Andrea Abend District Utility Engineer Phone: (301) 624-8116	Mr. Sonny Bailey Sign Shop 410-787-7676

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY THE SHA

THERE IS NO EQUIPMENT TO BE SUPPLIED BY THE SHA

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR

SPEC. NUMBER	DESCRIPTION	QUANTITY
814	12", one-way, three-section (R,Y,G) LED traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	6 EA
814	12", one-way, five-section (R,YA,Y,GA,G) (left arrows) LED traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	2 EA
814	8'/12", one-way, five-section 8"(R,Y,G) 12"(YA,GA) (left arrows) LED traffic signal head with adjustable bracket for mast arm mounting and tunnel visors.	2 EA
814	16", one-way, LED (DW, W) symbolic pedestrian signal head with bracket for post top mounting and outway visors. (Countdown Display)	2 EA
205	Test pit excavation.	5 C.Y.
610	4" concrete sidewalk.	275 S.F.
801	Furnish and install concrete for signal foundation.	18.5 C.Y.
813	Ground mounted sheet aluminum signs to consist of: Pedestrian education R10-3(1) sign. (Note: Sign to read "PUSHBUTTON TO CROSS SYKESVILLE PIKE".)	2 EA
813	Overhead (mast arm / pole) mounted sheet aluminum sign consisting of:	140 S.F.

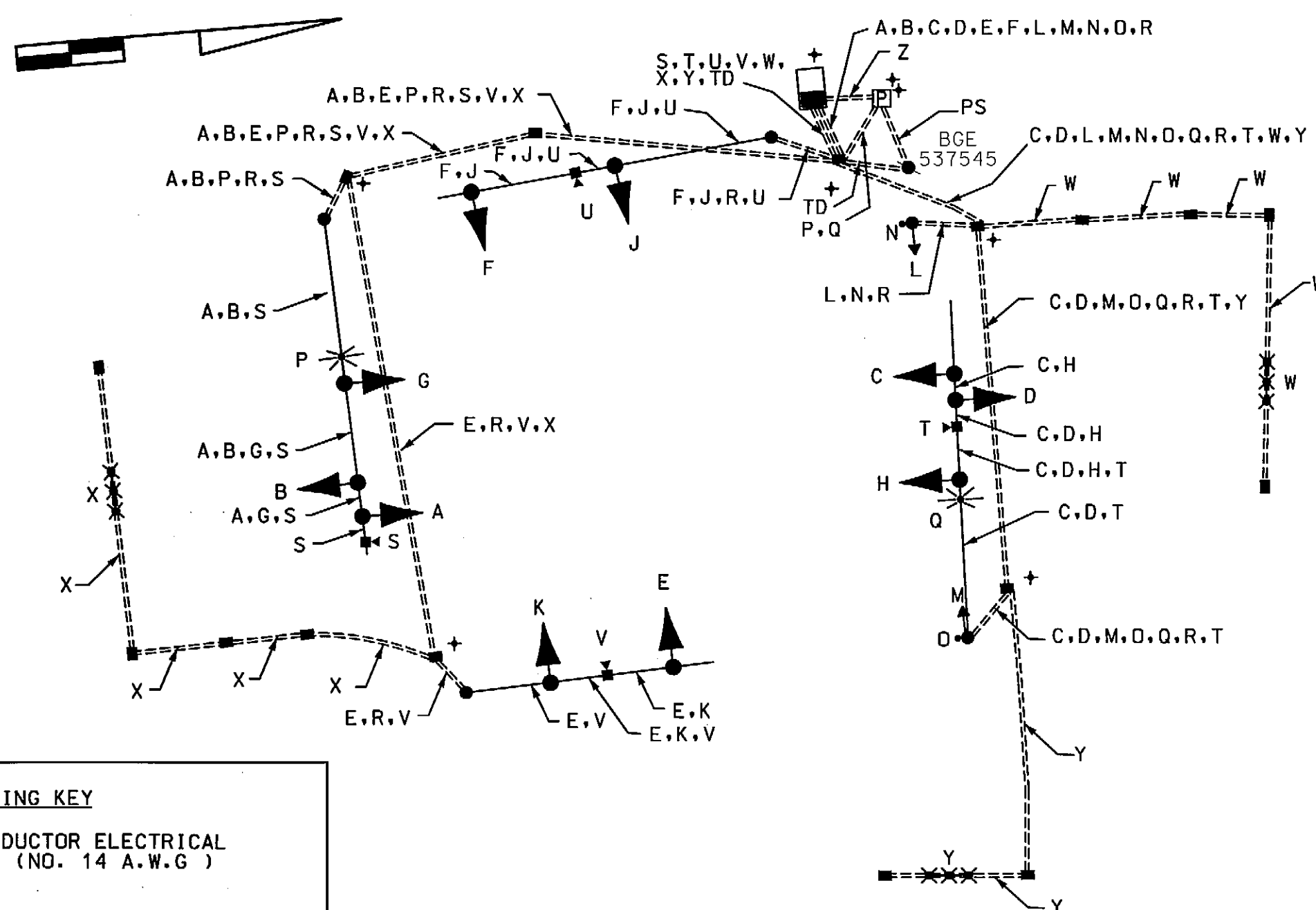
EQUIPMENT LIST (CONT.)

R3-5(L) "LEFT TURN ONLY" sign (30"x 36")	1 EA
D3-(1) "(arrow) Sandosky Rd: Sandosky Rd (arrow)" dual-faced sign, (variable x 16") mast arm mounted	2 EA
D3-(1) "(arrow) Raincliffe Rd: Raincliffe Rd (arrow)" dual-faced sign, (variable x 16") mast arm mounted	2 EA
D3-(1) "Sykesville Rd" sign, dual faced (variable x 16") mast arm mounted	2 EA
GUIDE SHIELD ASSEMBLY (36" x 75") pole mounted M3-1 "NORTH" 30"x 15" M1-5 "MD 32" 36"x 36" M6-1 "left arrow" 30"x 24"	1 EA
GUIDE SHIELD ASSEMBLY (24" x 51") pole mounted M3-3 "SOUTH" 24"x 12" M1-5 "MD 32" 24"x 24" M6-1 "right arrow" 21"x 15"	1 EA
GUIDE SHIELD ASSEMBLY (36" x 75") pole mounted M3-3 "SOUTH" 30"x 15" M1-5 "MD 32" 36"x 36" M6-1 "left arrow" 30"x 24"	1 EA
GUIDE SHIELD ASSEMBLY (24" x 51") pole mounted M3-1 "NORTH" 24"x 12" M1-5 "MD 32" 24"x 24" M6-1 "right arrow" 21"x 15"	1 EA
556 12" white heat applied permanent preformed thermoplastic pavement marking	160 L.F.
556 24" white heat applied permanent preformed thermoplastic pavement marking	200 L.F.
805 Furnish and install 2" schedule 80 rigid polyvinyl chloride conduit (trenched)	40 L.F.
805 Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - trenched	1040 L.F.
805 Furnish and install 3" schedule 80 rigid polyvinyl chloride conduit - bored	175 L.F.
805 Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit (trenched)	50 L.F.
805 Furnish and install 4" schedule 80 rigid polyvinyl chloride conduit - bored.	400 L.F.
811 Furnish and install electrical handhole.	16 EA
Furnish and install 2-conductor Tray cable (No.12 A.W.G.)	460 L.F.
Furnish and install 2-conductor electrical cable (No. 14 A.W.G.).	280 L.F.
Furnish and install 5-conductor electrical cable (No. 14 A.W.G.).	440 L.F.
Furnish and install 7-conductor electrical cable (No. 14 A.W.G.).	1600 L.F.
Furnish and install ground rod - 3/4" x 10'.	8 EA
Furnish and install No. 6 AWG stranded bare copper ground wire.	550 L.F.
810 Electrical cable-1-conductor (No. 8 A.W.G.).	90 L.F.
Furnish and install 27' steel pole and 50' mast arm.	4 EA
Furnish and install 10' breakaway pedestal pole with transformer base.	1 EA
Furnish and install non-invasive micro-loop set with 1000' lead-in.	2 EA
Furnish and install non-invasive Micro-loop set with 500' lead-in.	1 EA
Terra Interface Panel	1 EA
Terra Access Port	1 EA
Terra Video detector camera with cable (up to 500')	4 EA
Remove and dispose of existing signal/lighting equipment and material (including signal foundation 12" below grade).	LUMP SUM
2-wire central control unit	1 EA
Audible/tactile pedestrian pushbutton station & signs.	2 EA
20' lighting arm	2 EA
Furnish and install 250 watt HPS luminaire with photocell	2 EA
Remove existing curb and gutter	25 L.F.
Standard type "A" combination curb and gutter, 12" gutter pan, 6" depth	50 L.F.
Metered service pedestal	1 EA
Furnish and install electrical cable 3-wire, 1-conductor (No.250 KCMIL)	100 L.F.
Furnish and install NEMA size "6" traffic signal cabinet and controller	1 EA

PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12
PHASE 1 & 5	←G-/R	←G-/R	R	←G-/R	←G-/R	R	R	R	R	R	DW	DW
CHANGES TO PHASES 1 & 6, 2 & 5 OR 2 & 6												
PHASE 1 & 6	←G-/G	←G-/G	G	R	R	R	R	R	R	R	DW	DW
1 & 6 CHANGE	←Y-/G	←Y-/G	G	R	R	R	R	R	R	R	DW	DW
PHASE 2 & 5	R	R	R	←G-/G	←G-/G	G	R	R	R	R	DW	DW
2 & 5 CHANGE	R	R	R	←Y-/G	←Y-/G	G	R	R	R	R	DW	DW
PHASE 2 & 6	G	G	G	G	G	G	R	R	R	R	DW	DW
2 & 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW
PHASE 4 & 8	R	R	R	R	R	R	G	G	G	G	DW	DW
4 & 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW
PHASE 4 & 8 ALT	R	R	R	R	R	R	G	G	G	G	WK	WK
PED CLEAR / COUNTDOWN	R	R	R	R	R	R	G	G	G	G	FL/DW	FL/DW
4 & 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK

WIRING DIAGRAM



WIRING KEY	
7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	
5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	
2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)	
2-CONDUCTOR TRAY CABLE (NO.12 AWG)	
R - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)	
S - CONTROL CABLE (CAMERA TO CONTROLLER) UP TO 500'	
W - MICROLOOP LEAD-IN CABLE (1000')	
X - MICRO-LOOP LEAD-IN CABLE (500')	
Z - 3-1 CONDUCTOR ELECTRICAL CABLE (NO. 250 KCMIL)	
PS - 3-1 CONDUCTOR ELECTRICAL CABLE (NO.8 A.W.G.)	
TD-TELEPHONE DROP	
+- GROUND ROD	



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STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	
MD 32 (SYKESVILLE ROAD) AND SANDOSKY ROAD / RAINCLIFFE ROAD SYKESVILLE, MARYLAND	
GENERAL INFORMATION SHEET	
SCALE NONE	DATE 3-20-09
CONTRACT NO. CL-701-501-785	
DESIGNED BY R R ZACHERL	COUNTY CARROLL
DRAWN BY W J NIES	LOGMILE 06003200.47
CHECKED BY C J W	TMS NO. G-792
F.A.P. NO.	TOD NO.
TS NO.2089-E	DRAWING NO. 2 OF 5
SHEET NO. OF	